SHARP

OPERATIONS MANUAL / PARTS LIST

Vertical-Horizontal Milling Machine

(VH-25-DVS)

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1. Preface

This equipment is a Vertical - Horizontal milling machine, which can be used in metal surface processing, such as drilling, milling, groove and boring etc., for reaching a predetermined surface shape. The materials and parts used to make the equipment have been subject to strict quality testing to ensure that the long-term use of the equipment can maintain the optimal mechanical characteristics and therefore maximize the processing efficiency.

This manual will provide users with instructions regarding equipment operation, maintenance, troubleshooting and precautions, as well as detailed assembly diagram as reference for parts replacement.

To ensure that the user can operate the equipment safely, please read this manual thoroughly before use, and **follow the maintenance and operation precautions** to prevent serious harm to the users and equipment.

2. Safety Rules

2.1 Work Safety Codes

(1) The operator must receive the basic operation course and cannot operate the equipment before demonstrating the ability to safely operate it.

(2) Operators are required to observe the warning signs affixed to the machine. For the warning signs on the machine, please do not arbitrarily damage them.

(3) Before operating the machine, make sure that all switches and safety devices are in position and function properly.

(4) To operate the machine, for safety reason, the operator should wear safety glasses and safety shoes, and remove all jewelry and excessively loose clothes.

(5) Within the operator's activity range, no obstructing object is allowed.

(6) Before operation, make sure that the workpiece and the tool are firmly locked to prevent accidents.

(7) Do not place any tools or gauges on the machine's moving parts or on the control panel.

(8) Do not bring any part of the body close to the machine's movement range while the machine is running.

(9) Do not touch any switches or buttons when hands are wet.

(10) When the machine is turned on for a long time, the lighting will become hot and may cause burns.

(11) When adjusting or changing the belt, you must turn off the power first.

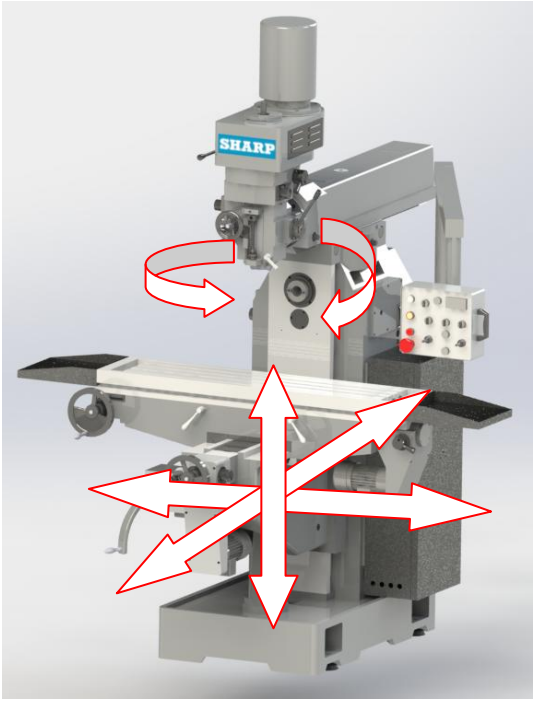
(12) If the machine parts and components are loose, adjust immediately; otherwise, it may cause the disintegration of components and lead to accidents.

(13) In the event of a power failure, the power supply should be switched off immediately.

(14) The repair and installation of the machine should be carried out by a qualified or experienced technician.

2.2 Dangerous Zone for the Machine

In the operation of the machine, the range of machining is a very dangerous area, the parts with the following symbol "⟺" are all within rotating or moving range, so be sure to alert operators and maintenance personnel to prevent serious harm.



3. Mechanical Specifications

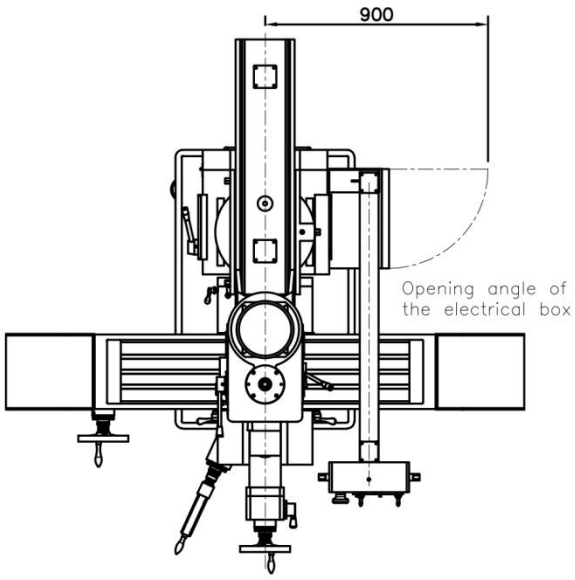
3.1 Mechanical Specification Sheet

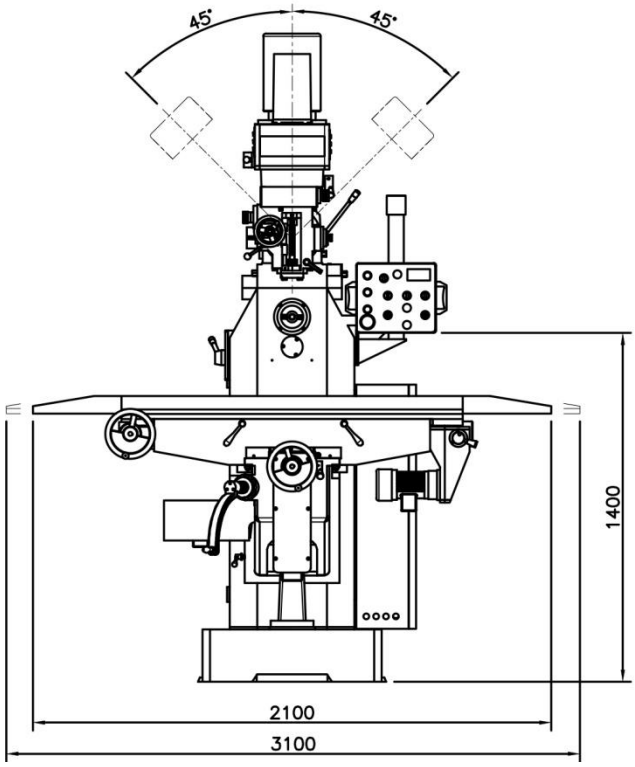
Model	Unit	VH-25-DVS
Travel		
Longitudinal travel (M./A.)	mm	1000 (39.37 in)
Cross travel (M./A.)	mm	400 (15.74 in)
Vertical travel (M./A.)	mm	470 (18.5 in)
Slideway X/Y/Z	type	△ / □ / □
Quill travel	mm	140 (5.51 in)
Overarm travel	mm	700 (27.55 in)
Overarm swivel	degree	360
Quill swivel (R&L)/(F&B)	degree	±45 / Fixed
Dist. from spindle nose to table	mm	100-570 (3.93”-22.44”)
Spindle centerline to column	mm	180-880 (7.08”-34.64”)
Table		
Dimension	mm	1370x300 (53.93x11.81 in)
T-slots (Width x No. x Pitch)	mm	16x3x70 (0.62x3x2.7 in)
Max. table load	kg	
Spindle		
Vertical spindle speed	rpm	60-4500 (Inverter)
Vertical feeds	mm/rev	0.04/0.08/0.15 (0.0015, 0.0031, 0.0059 in)
Taper	type	NT 40
Quill diameter	mm	105
Horizontal spindle speed	rpm	60-1400 (Inverter)
Horizontal taper	type	NT 40
Motor		
Vertical / Horizontal spindle	HP	5
X/Y/Z axis motor	HP	0.5 (gear ratio1:10)
Feedrate		
X/Y axis speed	mm/min	30-1000 (1.18-39.37 in)
Z axis speed	mm/min	50-510 (1.96 – 20.07 in)
Machine		
Space(L x W x H)	mm	2270x3100x2620 (89.37x122x103.1 in)
Packing dimension(L x W x H)	mm	1800x2280x2200 (70.86x89.76x86.6 in)
Net Weight	kg	2200
Gross Weight	kg	2400

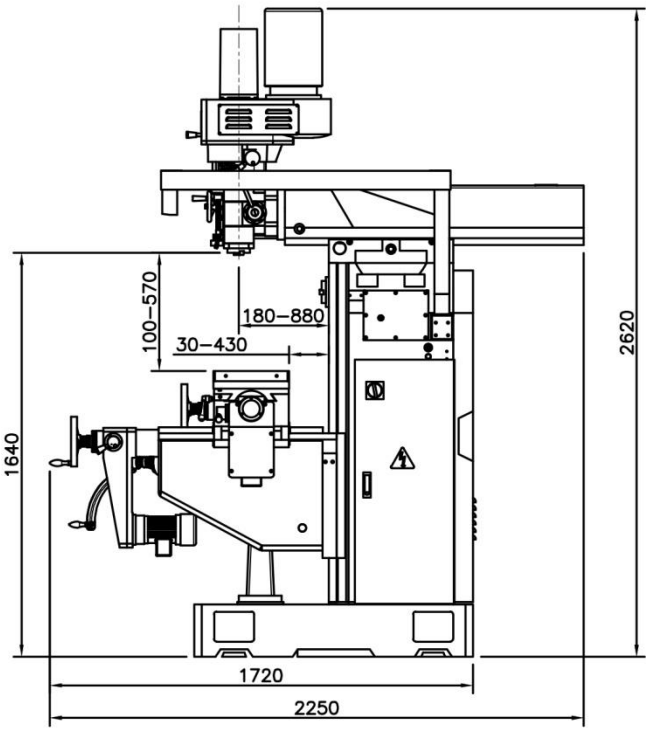
3.2 Mechanical Noise

Before shipping out of the factory, this machine is manufactured at a noise level of less than 80 dB according to ISO 4871.

3.3 Machine Dimensions







4. Machine Installation Moving

4.1 Installation Environment Requirements

In general, the machine needs to have the following installation conditions:

(1) There must be sufficient space for repair work, and the electrical box door can be opened without interference.

(2) Make sure the ground strength is enough to support the machine load.

(3) External temperature: 0~40℃

(4) Relative humidity: 30%~95% (no condensation)

(5) To facilitate future repair and maintenance, please keep appropriate space around the machine.

4.2 Power Requirement

(1) Voltage supply: 200/220V (±10%)

(2) Power frequency: 50/60Hz (±1Hz)

4.3 Moving

4.3.1 Equipment Moving Requirement

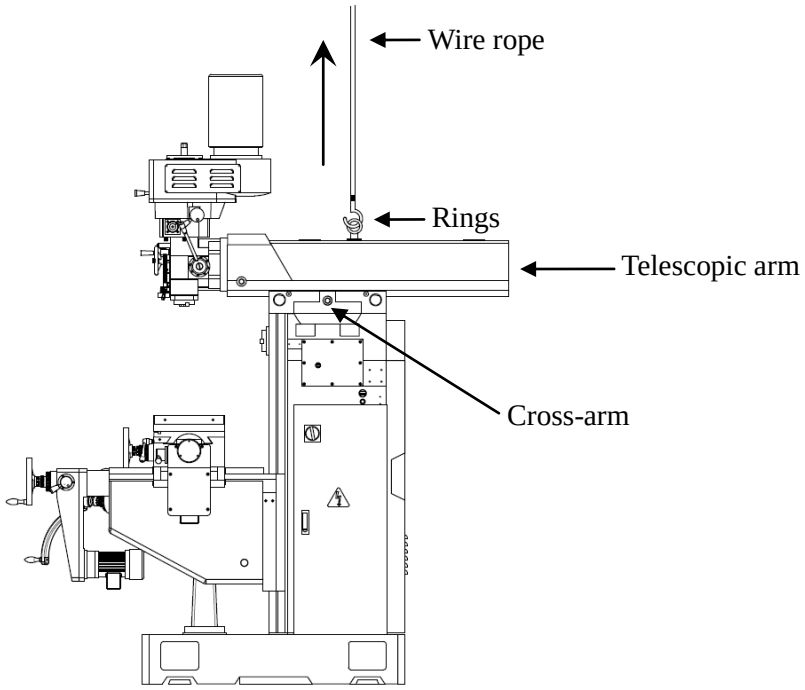
(1) Refer to the table below for the weight of the machine. To lift the machine, it is necessary to have a strong hoist, a crane or a forklift and a qualified operator.

Model	Wight
YSM-26 series	2200kgs

(2) If possible, please prepare some rags and wood blocks to protect the body to prevent injury.

4.3.2 Lifting Method

The following figure shows the machine lifting method that the cross-arm bar can be adjusted to move the telescopic arm, during lifting, for the machine to be located in the center of gravity, to level and prevent risks.



4.3.3 Precautions for Moving Machine

(1) Hoist operators are required to have license.

(2) Lifting equipment (cranes, slings, rings, lifting clamps, etc.) should have sufficient strength to withstand the weight of the machine.

(3) After the machine is lifted, the operator should not be exposed within the range of possible machine fall.

(4) Check the machine again. If there are any loose parts, tighten it.

(5) Lifting capacity of hoists and cranes should be sufficient. Before moving, achieve firm and stable state.

4.4 Machine Installation

4.4.1 Machine Positioning

(1) Before the machine is put down, place the corner pads first at the machine supporting positions.

(2) Please remove the rust-proof oil with clean cotton, and then apply lubricant.

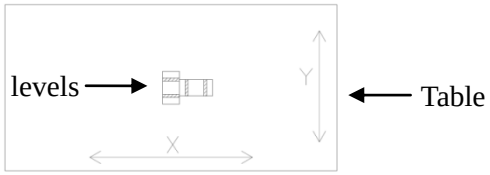
(3) Check if the oil feeder has enough oil.

4.4.2 Level Adjustment

(1) Place two levels at the center of the table and place them at right angles.

(2) Move table to the center of the stroke, check the bubble position in the level, use wrench to adjust bolts on the bottom base, until the bubble is centered in the level, as shown in the following figure.

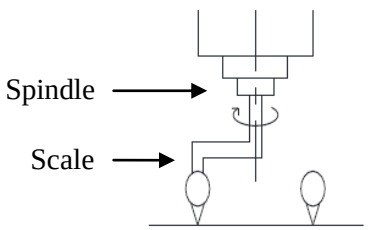
(3) Check if the oil feeder has enough oil.

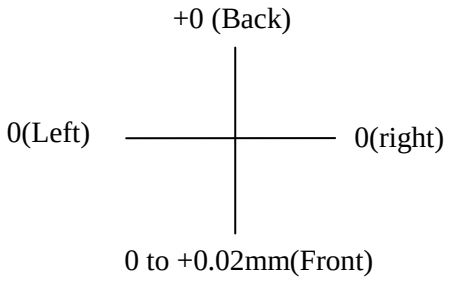


4.4.3 Precision Adjustment

(1) The table will move to the center of the moving path in X and Y axes. Move the head to the center of the table. The scale will be fixed to the end of the main spindle, so the needle will contact the table. Rotate the spindle and measure the right angle (cross), as shown in the figure below.

(2) With the above-mentioned measurement values, use wrench to fine-tune the leveling for machine head to correct precision within machine specifications.





4.4.4 Check Prior to Start-up

To ensure the safety of users and machine, please do the following checks before starting up the machine to ensure machine precision and prolong its life.

(1) Check if the lines, piping and all connectors are damaged.

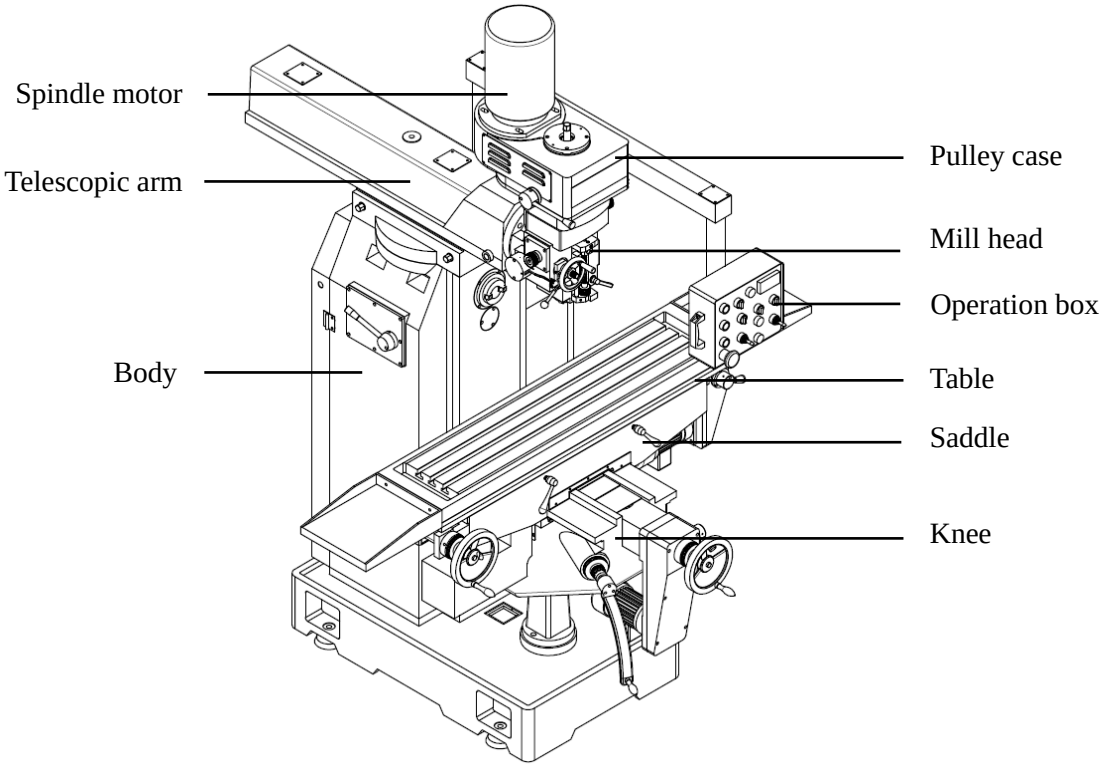
(2) Check that if the voltage, frequency and phase of the input power supply are correct.

(3) Make sure that all switches can be properly operated without any obstacles.

(4) Watch if any personnel is exposed in the danger zone.

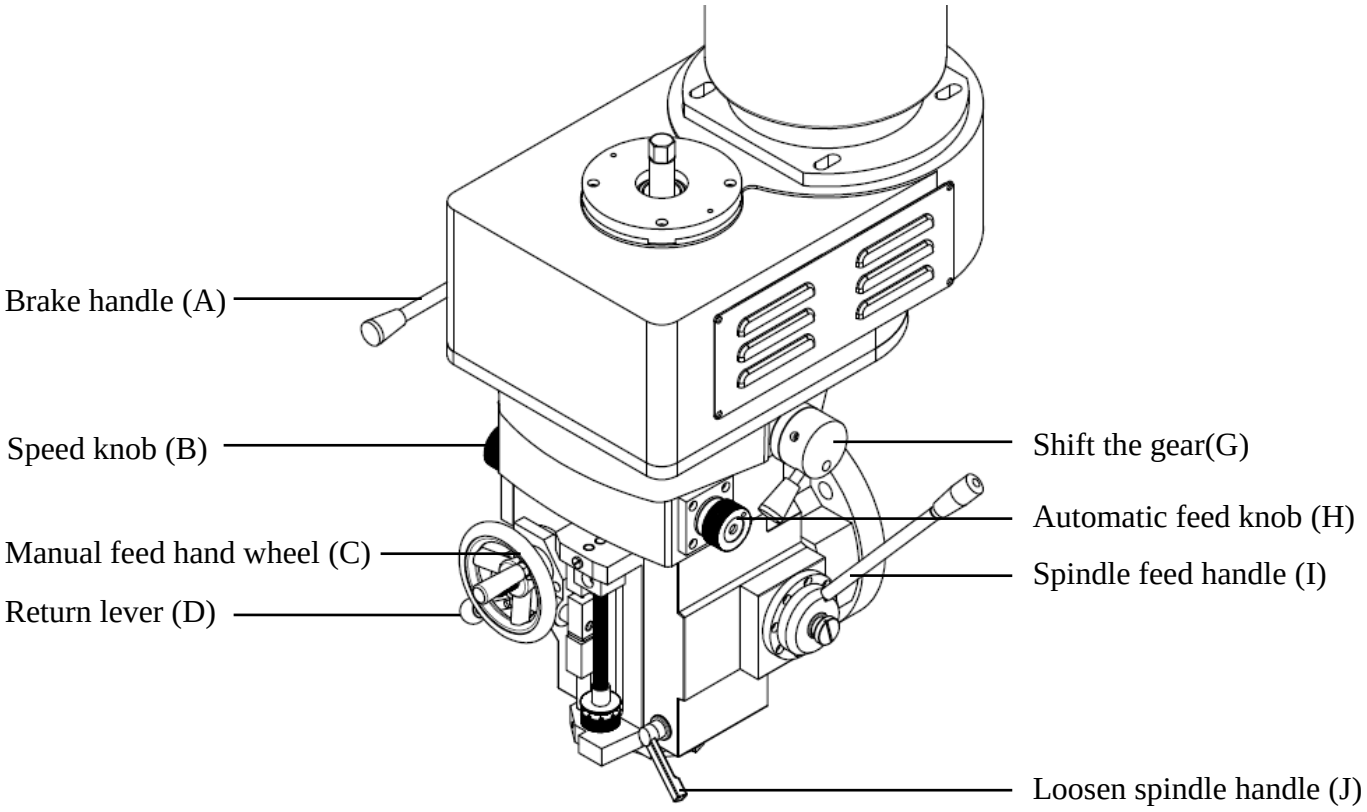
5. Machine Operation

5.1 Machine Part Description



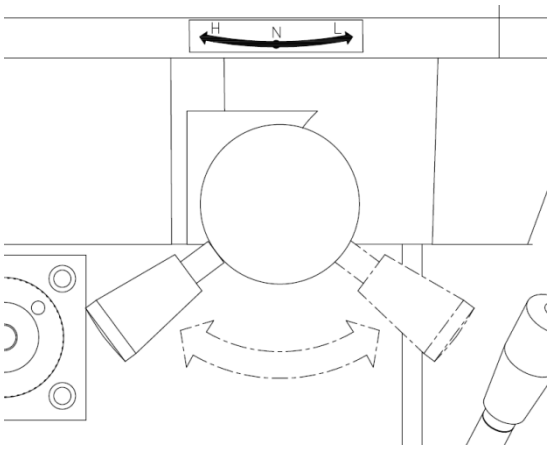
5.2 Machine Head Description

5.2.1 Head(Inverter) Description



5.2.2 Spindle gear shifting

Operate handle (G), Turn the shift handle left to go high gear and right to go low gear.
The speed range varies from 55 to 570 RPM, and from 435 to 4500 RPM in high gear.

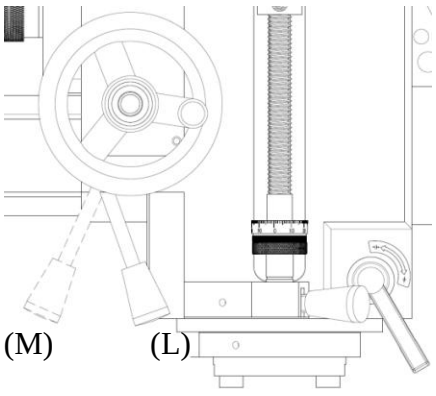


5.2.3 Manual Feed

Use the main spindle feed handle (I) to rotate the spindle up and down. Refer to Section 5.2.1 for stroke setting.

5.2.4 Manual Micro Feed

When using manual micro feed, turn the automatic feed knob (H) to neutral position, place the return lever (D) at (K) position, turn the manual feed hand wheel (C), forward for main spindle up, reverse for main spindle down. When the function is not used, set the return lever to (L).



(M) (L)

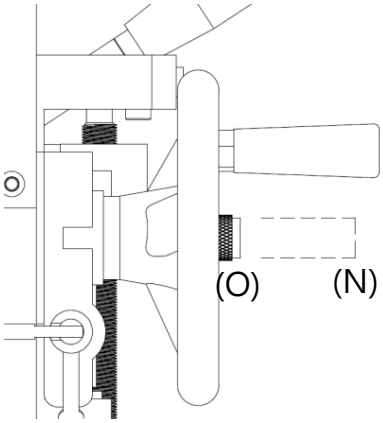
5.2.5 Auto Feed

Auto feed procedures as follows:

(1) Loosen main spindle handle (J).
(2) Turn auto feed knob to in position.
(3) Auto speed includes (0.04) / M (0.08) / H (0.15), which can be selected by speed knob (B)for desired feed speed.
(4) Move the return lever (D) to (M) position.

(5) When the main spindle motor runs forward (reverse), the manual feed hand wheel (C) will automatically rotate forward (reverse) to load the tool, and the screw on return lever is back to (O) position; if the screw is in (N) position, the hand wheel will rotate reverse (forward) to release the tool.

Caution: When auto feed is not activated, move the return lever (D) to (L) position. When the main spindle is running, do not change automatic feed knob (H) to in position, to prevent mechanism damage.



Other Cautions:

(1) When replacing milling cutter, users are advised to shift the gear (G) to low gear.

(2) Gear shift or change must be done when the motor is stopped to prevent users from danger.

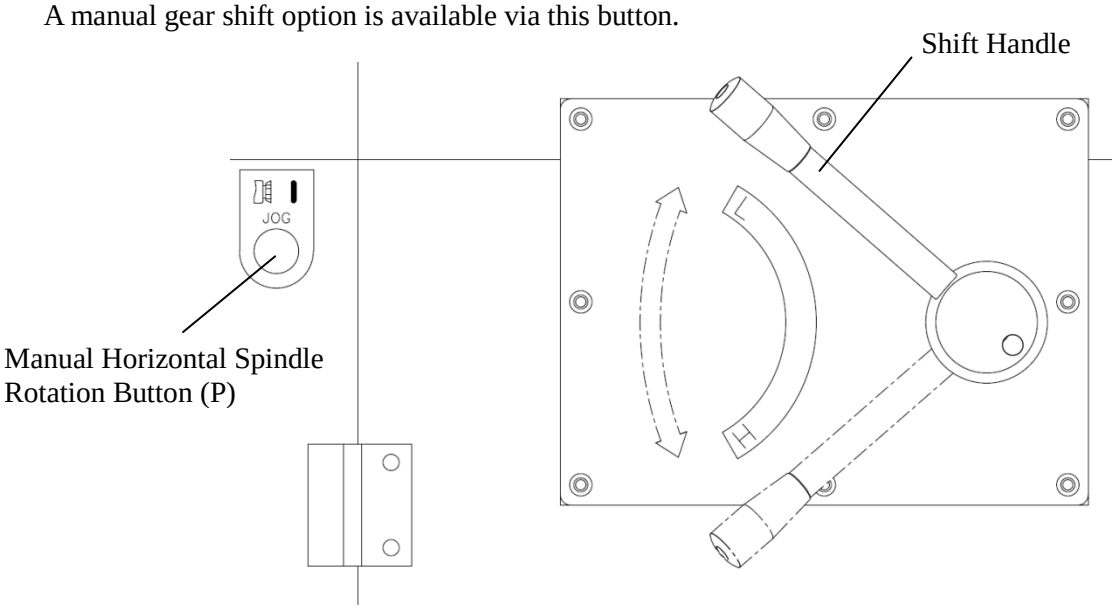
(3) For the main spindle feed action, loosen the main spindle fastening handle to prevent mechanism damage.

(4) When the main spindle speed exceeds 3,000rpm, do not use automatic feed.

5.3 Horizontal Milling Operation Instructions

Manual gear shifting is available, providing a low-speed range of 215-1400 RPM and a high-speed range of 40-215 RPM.

A manual gear shift option is available via this button.

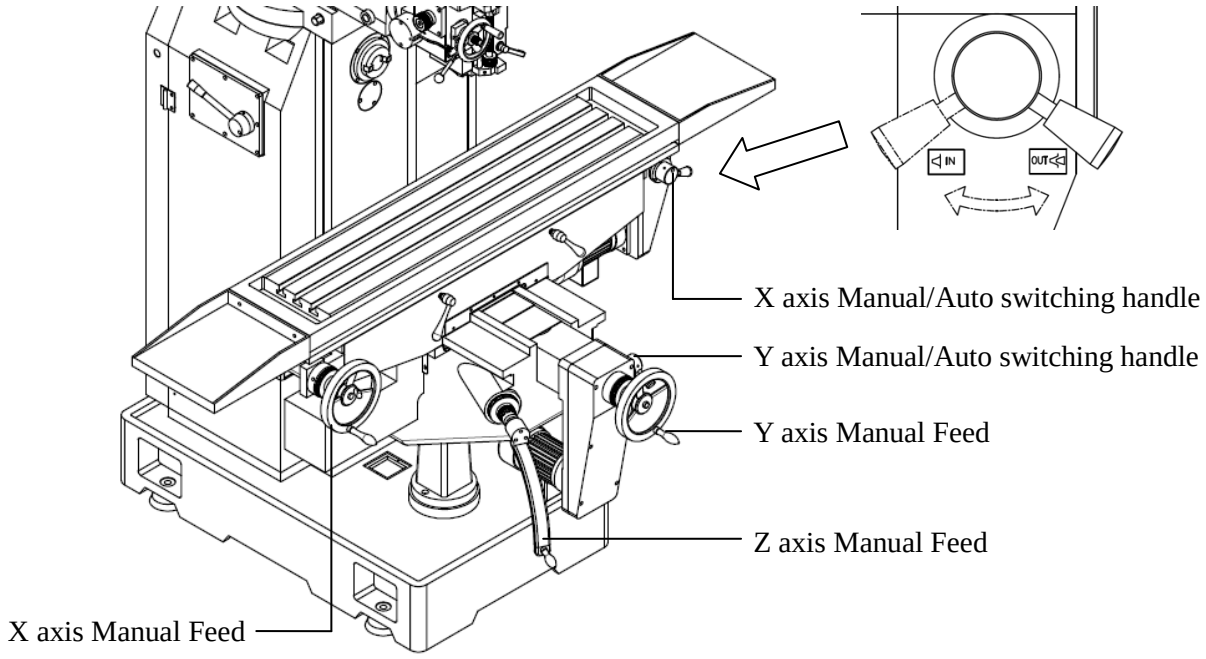


5.4 Tri-axis Operating Instructions

5.4.1 Tri-axis Manual/Auto Feed Instructions

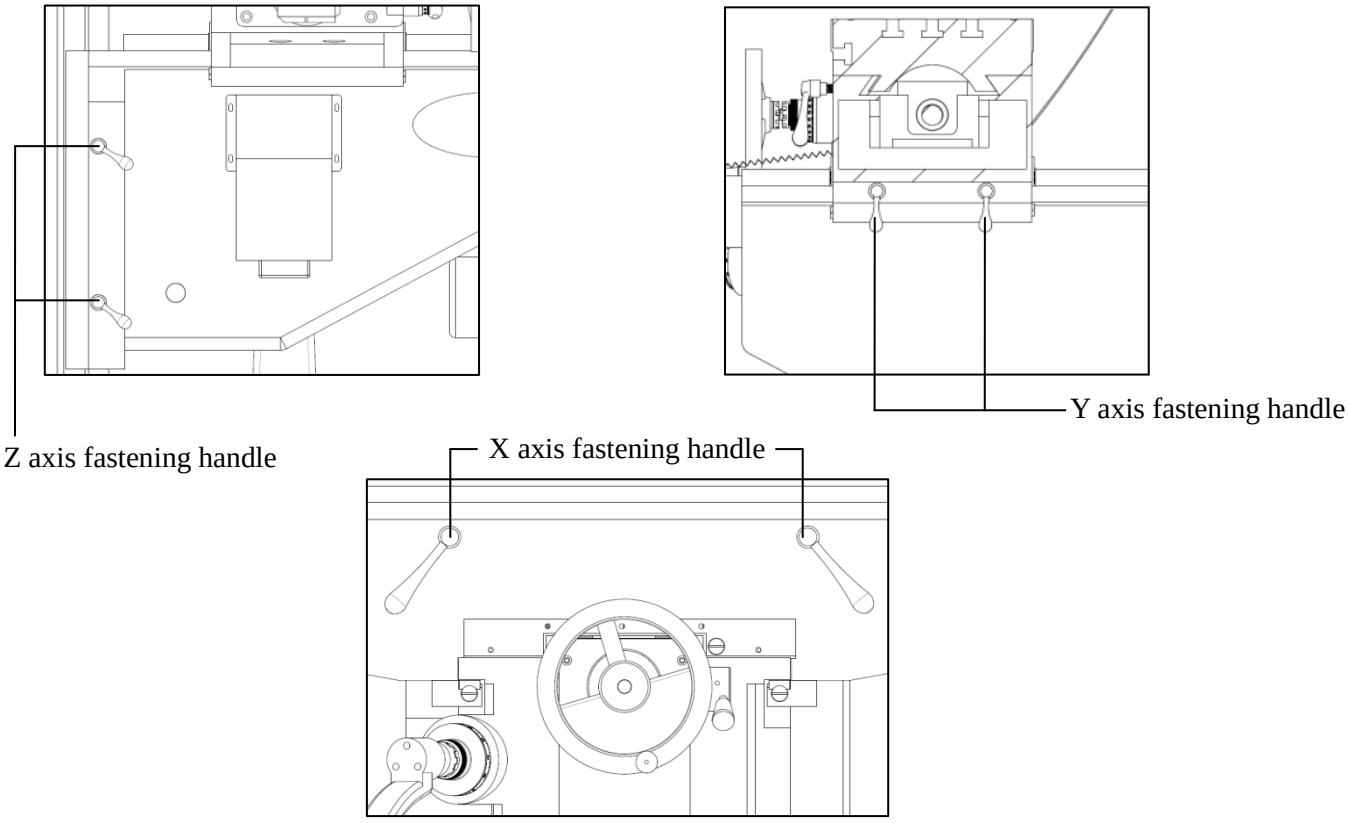
Tri-axis manual handwheel operation, allowing movement in all axes.

(Warning: To enter manual(OUT) or automatic mode(IN), you must switch the handle.)

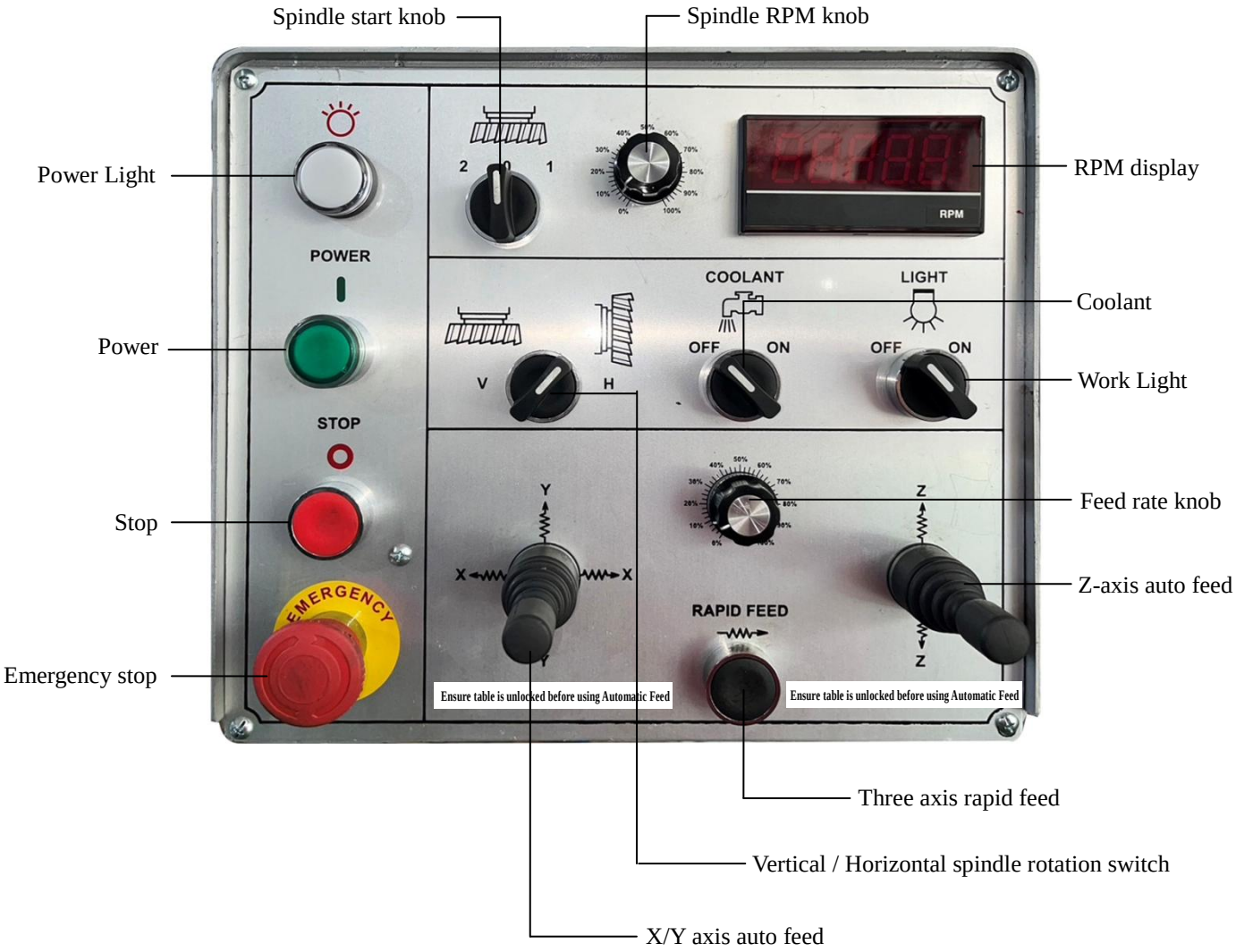


5.4.2 Fixing operation Instructions

When performing heavy-duty re-cutting, the relative axial direction may experience slippage. Therefore, it is recommended to fix the fixture to improve machine stability.

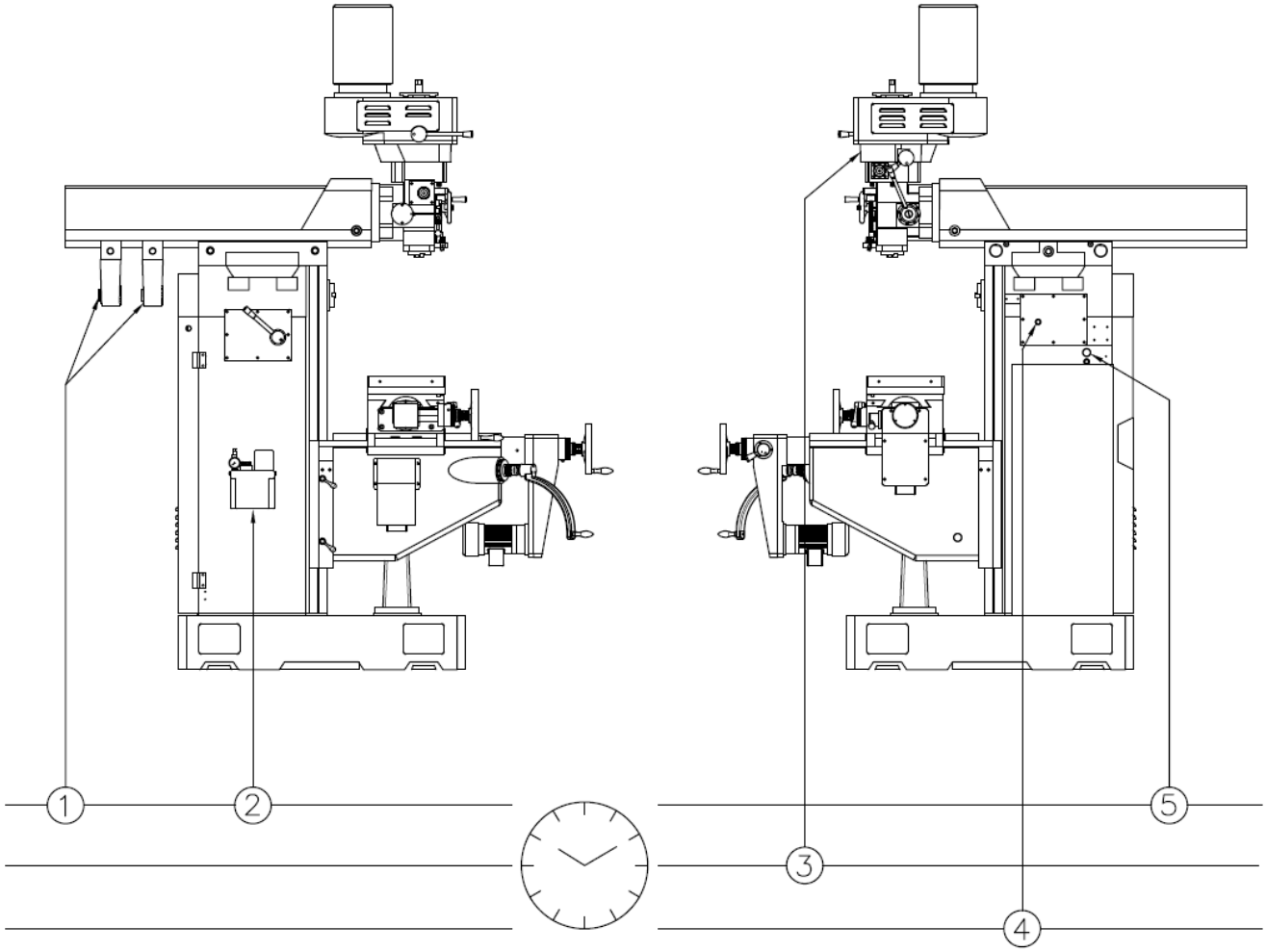


5.5 Operating Panel Function



6. Maintenance and Inspection

6.1 Machine Lubrication Schedule



Lubrication position	1	2	3	4	5
Check (hours)	8	8	-	-	8
Add oil (days)	-	-	3	-	-
Oil re-new (month)	-	-	-	6	-
Specification for oil	VG32	VG68	VG68	VG32	VG32

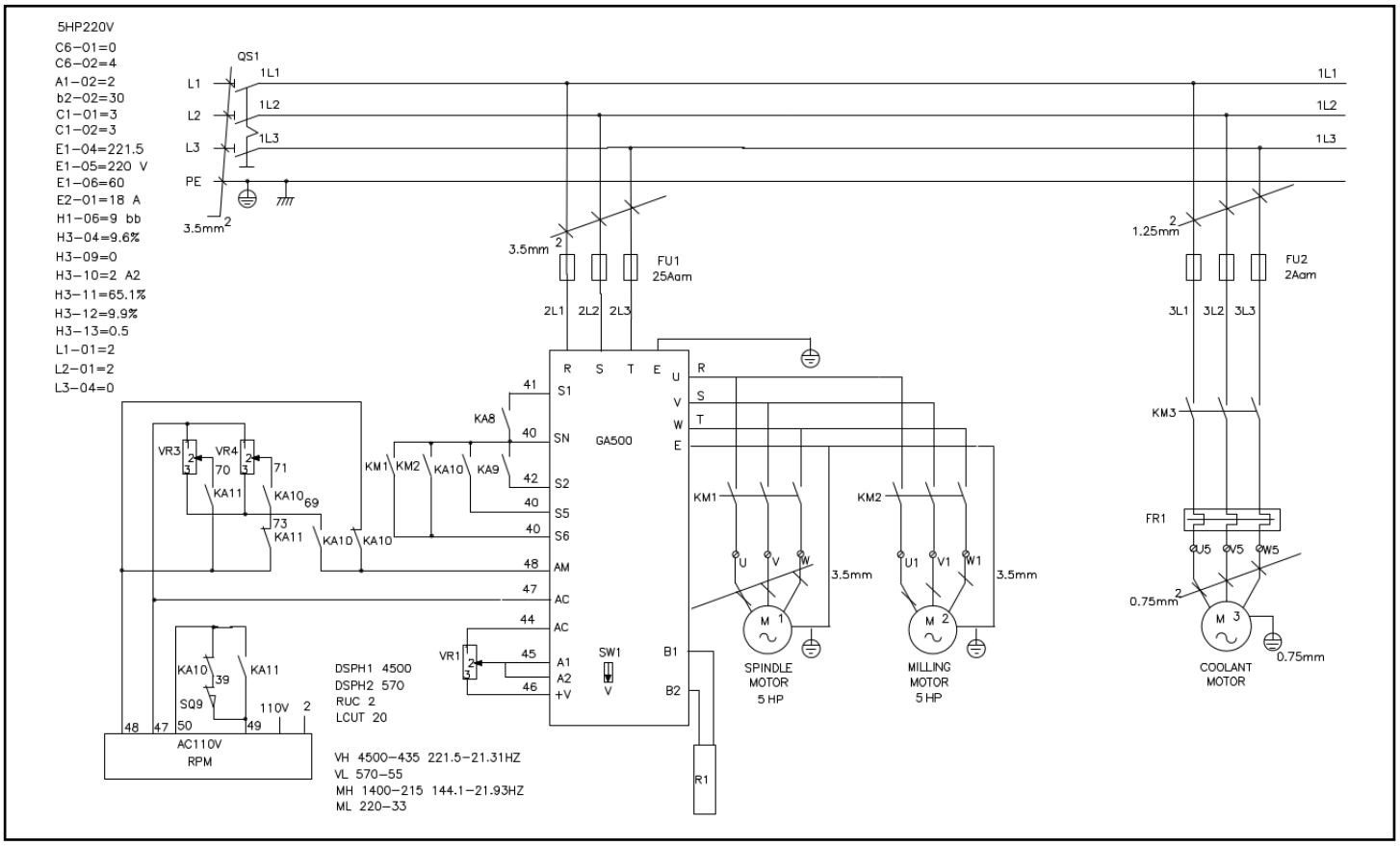
Cautions: (1) Prior to lubricating, clean the oil feeder first.

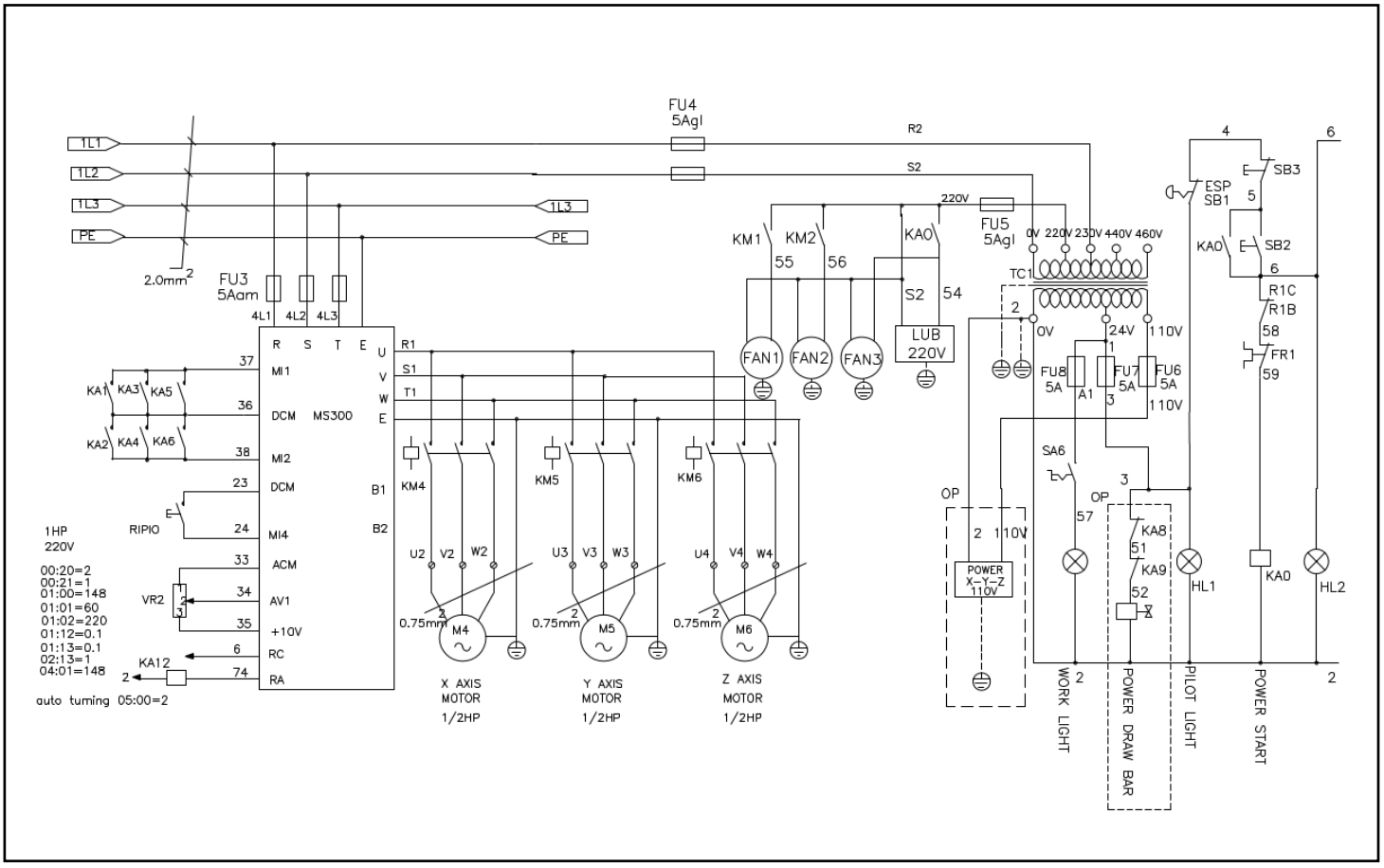
(2) Please follow the above instructions on a regular basis for oil change, to keep the machine in a good state of lubrication, and prolong the machine life.

(3) No.3 Add 3-5cc of lubricant and shift between high and low gears to ensure proper lubrication.

7. Electrical Circuiting Diagram

7.1 Electrical Diagram



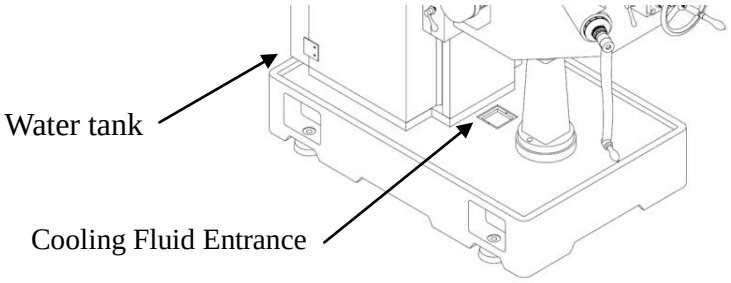


6.2 Cooling Fluid for Cutting

(1) Selecting cutting fluid depends on cutting conditions. Select the appropriate cutting fluid.

(2) Inappropriate cutting fluid or improper use of the cutting fluid may result in serious damage to machine and personnel.

(3) Clean water tank and filter periodically.



6.3 Daily Maintenance

(1) Check if the liquid level in oil feeder is on the line.

(2) Run the machine for 5 minutes before daily work.

(3) At the end of every work day, clean the table and remove workpiece, and add a little lubricant in the table.

(4) After work, loosen all fastening handles, move tri-axis sliding body to appropriate position; if the head deviates, move it to the position at zero degree.

6.4 Monthly Maintenance

(1) Check if the wedge of each axle are normal.

(2) Check if the feed screw and nut gap is normal.

(3) Check if the fastening handles for the main spindles and all other axles are normal.

6.5 Seasonal Maintenance

(1) Check if head brake, belt and gearshift mechanism are normal.

(2) Clean or replace lubricant, strainer.

6.6 Semi-annual Maintenance

(1) Check if motor runs normally or there is noise.

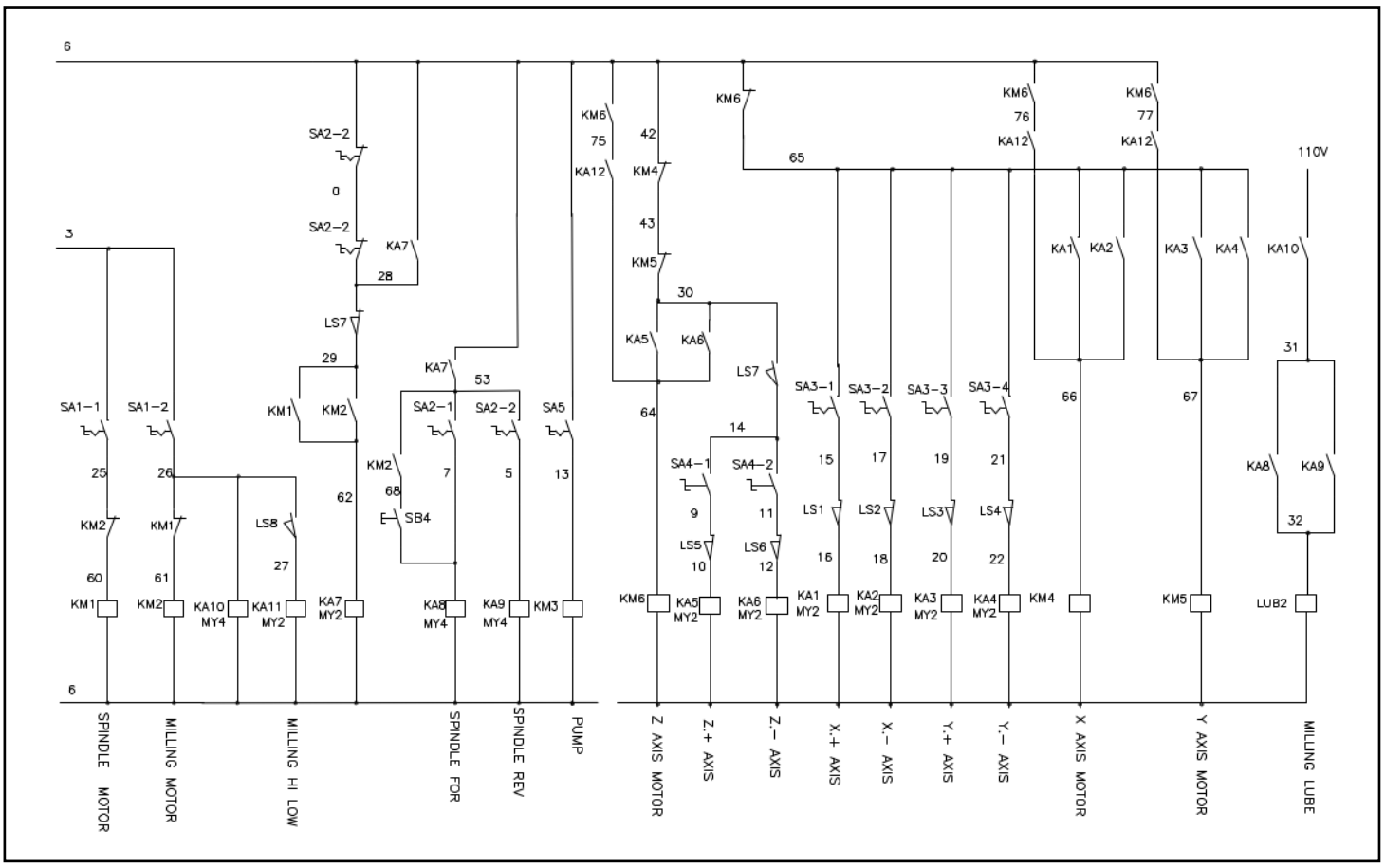
(2) Immediately replace worn and unworkable parts found during maintenance.

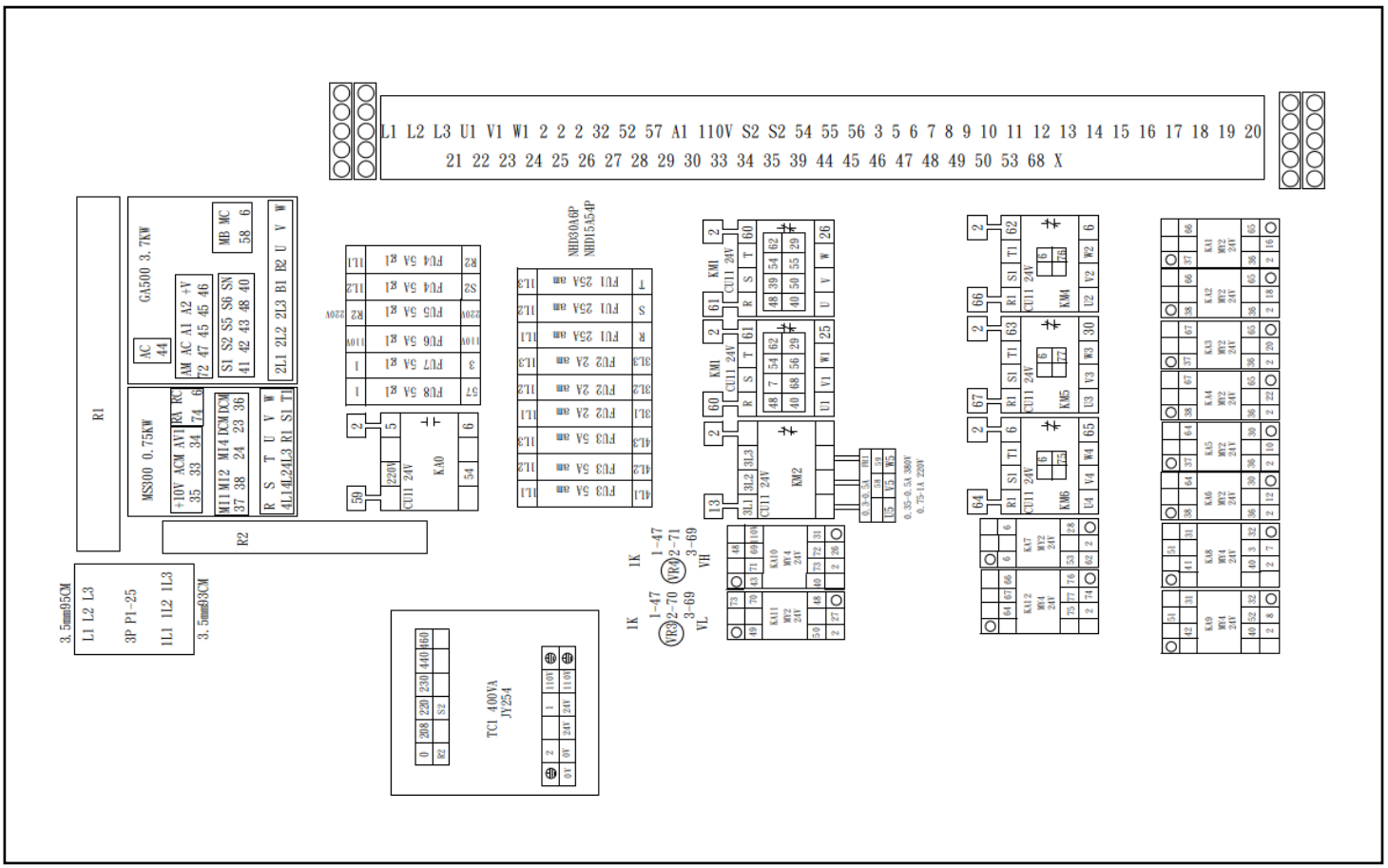
(3) Need to adjust mechanical leveling.

6.7 Annual Maintenance

(1) Check mechanical precision, and determine if adjustment is needed.

(2) Check if the oil line and the connector are good, if there is oil leak or damage.


SPINDLE MOTOR
MILLING MOTOR
MILLING HI LOW
SPINDLE FOR
SPINDLE REV
PUMP
Z AXIS MOTOR
Z+ AXIS
Z- AXIS
X+ AXIS
X- AXIS
Y+ AXIS
Y- AXIS
X AXIS MOTOR
Y AXIS MOTOR
MILLING LUBE
110V

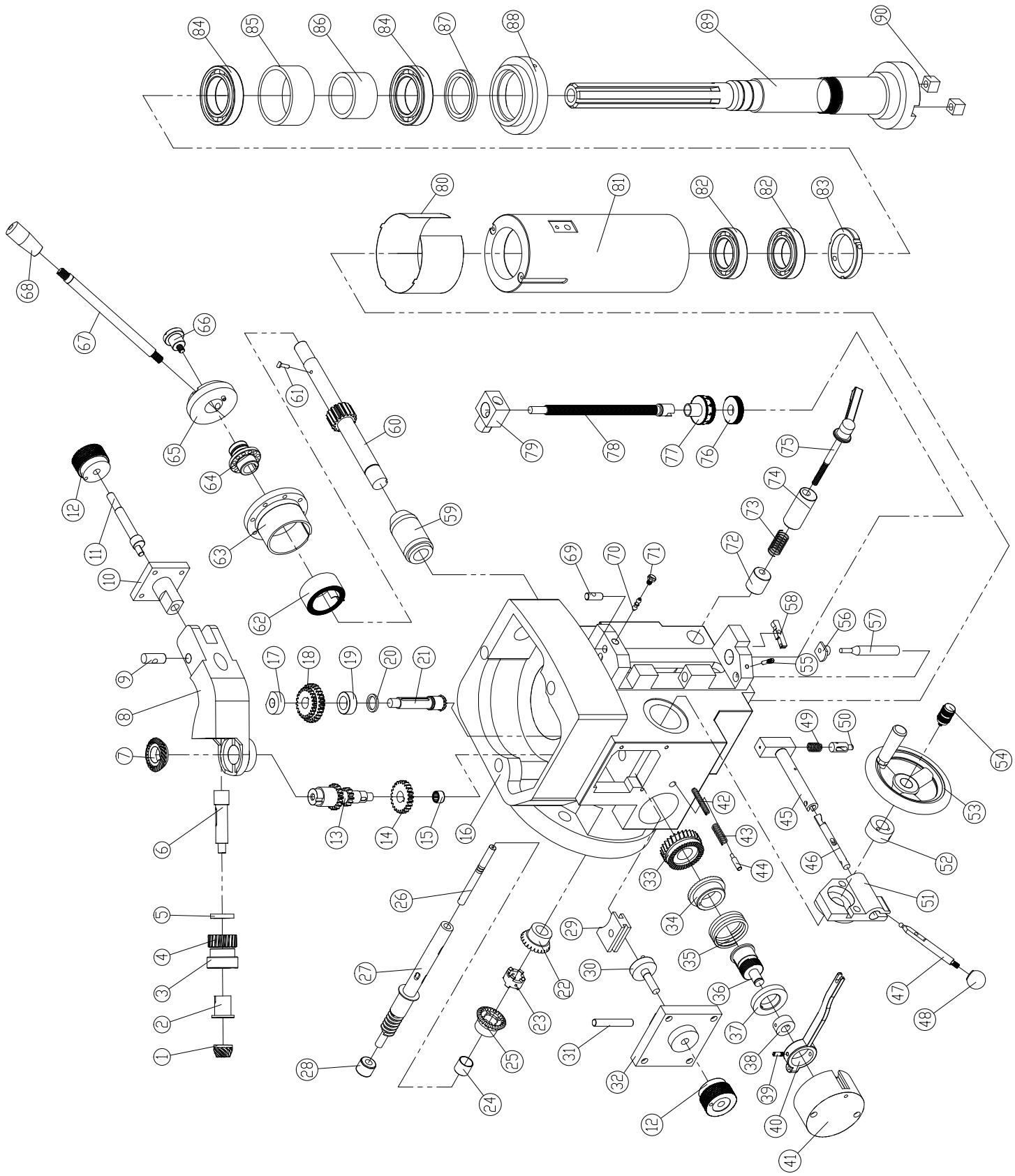

L1 L2 L3 U1 V1 W1 2 2 2 32 52 57 A1 110V S2 S2 54 55 56 3 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 33 34 35 39 44 45 46 47 48 49 50 53 68 X

8. Assembly Drawing

8.1 Head Upper (Inverter) Assembly Drawing / Parts List

No.	Parts No.	Description	Qty
1		Inverter Motor	1
2	18J024C	Spacer	1
3	18J024F	Motor Pulley	1
4	18J023A	Tooth Belt 8YU-880	1
5	18J026S	Pulley Box	1
6	18G101B	Side cover	1
7	18J001	Drawbars	1
8	18J002	Washer	1
9	18J003	Upper Bearing Cover	1
10	BR008	Ball Bearing (6209)	1
11	18G101	Side cover	1
12	18J009	Locknuts (M50xP2.0)	1
13	18J010A	Spindle Pulley	1
14	18J011	Pulley Seat	1
15	18J013	Bearing Cover	1
16	16J051	Brake Ring Screws	1
17	18J050	Brake Ring	1
18	BR009	Ball Bearing (6210)	2
19	18J053	Brake Seat	1
20	16J068	Brake block	2
21	16J037	Locate Pins	1
22	16J047	Locate Block lever	2
23	16J069	Black Ball (5/16")	2
24	18J065	Brake Lever	1
25	16J061	Brake Stopper	1
26	16J038	Fixed Ring	1
27	18J004	Pulley shaft	1
28	16J016	Spacer	1
29	18J040	Spindle Gear	1
30	18J076	Spring Slice	1
31	18J039	Spindle Sleeve	1
32	BR012	Ball Bearing (6910)	2
33	18J078	Inner Spacer	1
34	18J079	Outer Spacer	1
35	18J075	Casing	1

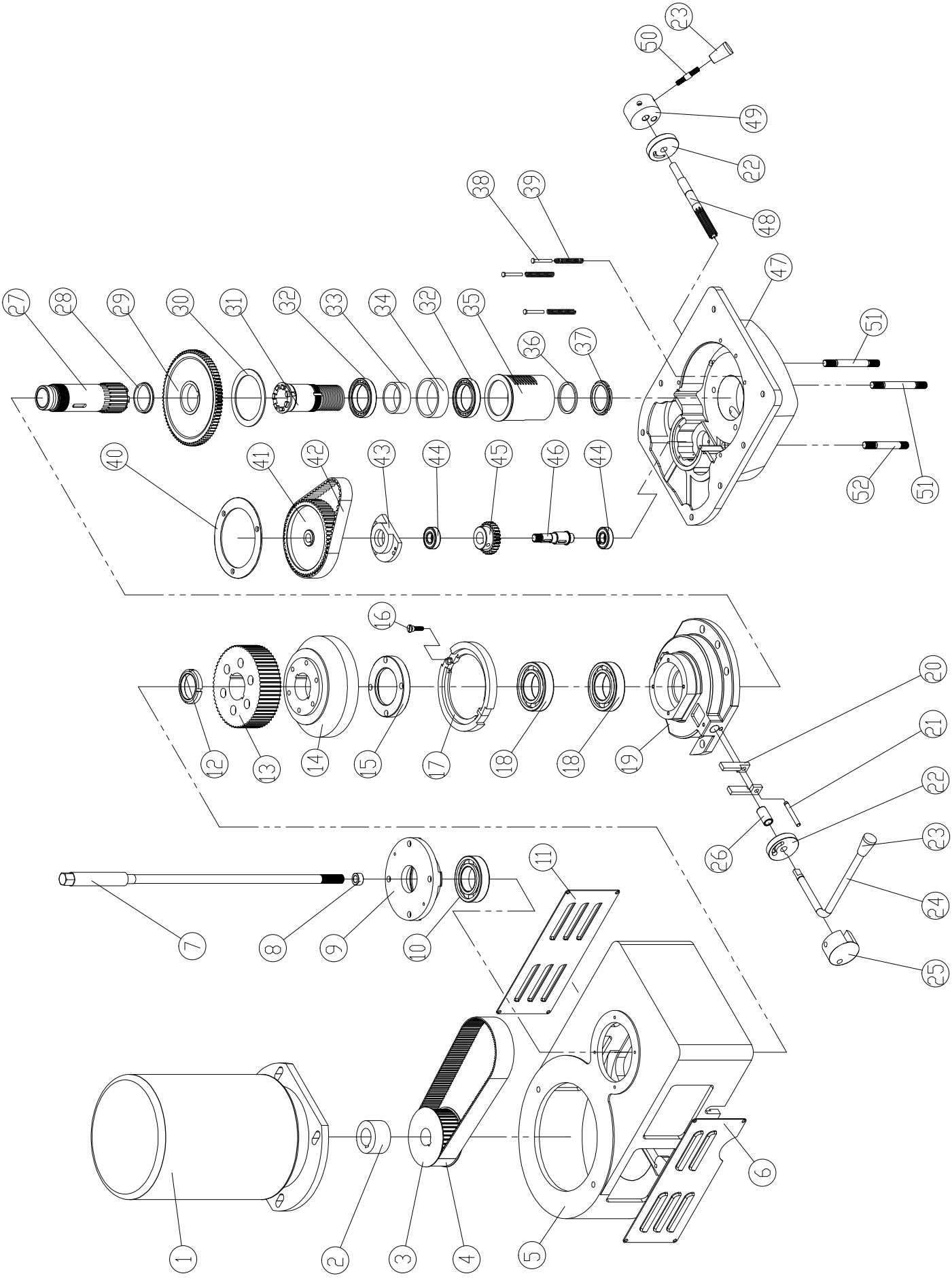
No.	Parts No.	Description	Qty
36	18J058	Spacer	1
37	18J056	Locknuts (M50x2.0)	1
38	16J045	Spring Fixed Pin	3
39	16J046	Spring	3
40	16J035	Platen	1
41	16J030	Pulley	1
42	16J015	Tooth Belt (560H8M)	1
43	16J031	Bearing Base	1
44	BR002	Ball Bearing (6203)	2
45	16J083	Gear (26T)	1
46	16J080	Gear Shaft	1
47	18J028	Gear Box	1
48	18J059	Shift Shank	1
49	16J041	Block	1
50	16J049	Shift Lever	1
51	18J073	Bolt	2
52	18J073A	Bolt	1



8.2 Head Lower Assembly Drawing / Parts List

No.	Parts No.	Description	Qty
1	18B003	Bevel Gear Shaft (12T)	1
2	18B004	Bushing	1
3	18B005	Gear	1
4	18B007	Gaskets	1
5	18B008	Gear (20T)	1
6	18B009	Bevel Gear Shaft	1
7	18B015	Bevel Gear (24T)	1
8	18B017	Shake Seat	1
9	15B016	Locate Pins	1
10	18B019	Bushings	1
11	18B018	Shaft	1
12	18B023	Knob	2
13	18B036	Gear (18T/12T)	1
14	18B040	Gear (23T)	1
15	BR031	Needle roller bearings	1
16	18B192A	Head	1
17	18B027	Bushing	1
18	18B028	Gear (17T/28T/22T)	1
19	18B033	Bushing	1
20	18B034	Spacer	1
21	18B035	Bevel Gear Shaft (12T)	1
22	18B051	Bevel Gear (24T)	1
23	18B050	Clutch	1
24	18B048	Copper Bushings	1
25	18B049	Bevel Gear (24T)	1
26	18B055	Return lever	1
27	18B057	Feed screw	1
28	18B042	Bushing	1
29	18B063	Shift fork	1
30	18B064	Crank rod	1
31	15B060	Locate Shaft	1
32	18B066	Cover	1
33	18B092	Worm gear (30T)	1
34	18B080	Clutch	1
35	18B079	Spring	1
36	18B081	Clutch Sleeve	1
37	18B078	Spring Nuts	1
38	18B075	Clutch Ring	1
39	15B074	Screw Rod	1
40	18B096	Bracket bar	1
41	18B099	Clutch Ring	1
42	15B088A	Spring	1
43	15B088	Spring	1
44	15B089	Locate Pins	1
45	18B118	Jumper Sets	1
46	18B103	Convex Rod	1

No.	Parts No.	Description	Qty
47	18B104	Handle	1
48	15B024	Black Ball (1/4")	1
49	15B120	Spring	1
50	15B121	jumping bar	1
51	18B106	bracket	1
52	18B113	Handwheel Clutch	1
53	18B125	Handle	1
54	18B110	Screw Rod	1
55	15B146	Springboard Pin	1
56	18B123	Jumper Sets	1
57	18B124	jumping Bar	1
58	15B145	springboard	1
59	18B090	Gear Shaft Sleeve	1
60	18B166	Toothed Rod	1
61	15B168	Tooth Fixed Block	1
62	18B178	Spring	1
63	18B177	Spring Cover	1
64	18B176	Gear seat	1
65	18B175	Hand seat	1
66	15B172	Tooth set screw	1
67	18B190	Handle	1
68	15B191	Black Ball (3/8")	1
69	15B184	Return Lever	1
70	15B183	Ball-type jumper	1
71	15B185	Ball-type Jumper Plug	1
72	18B148	Tooth Fixed Tube	1
73	18B152A	Spring	1
74	18B153	Fixed Pin	1
75	18B149	Fixed Handle	1
76	15B161	Stop Nut	1
77	15B162	Fine-tune the nut	1
78	18B164	Fine-tuning screw	1
79	18B163	Stop Block	1
80	18B128	Dust Sheet	1
81	18B142	Tooth Tube (NT40)	1
82	BR023	Ball Bearing (6008)	2
83	18B129	Locknuts (R8)	1
84	BR013	Angular Ball Bearing (7010)	2
85	18B136	Outer Spacer	1
86	18B137	Inner Spacer	1
87	18B134	Bearing Cover	1
88	18B133	Tooth Nuts (NT40)	1
89	18B127	NT40 Spindle	1
90	15B139	Stop Block	2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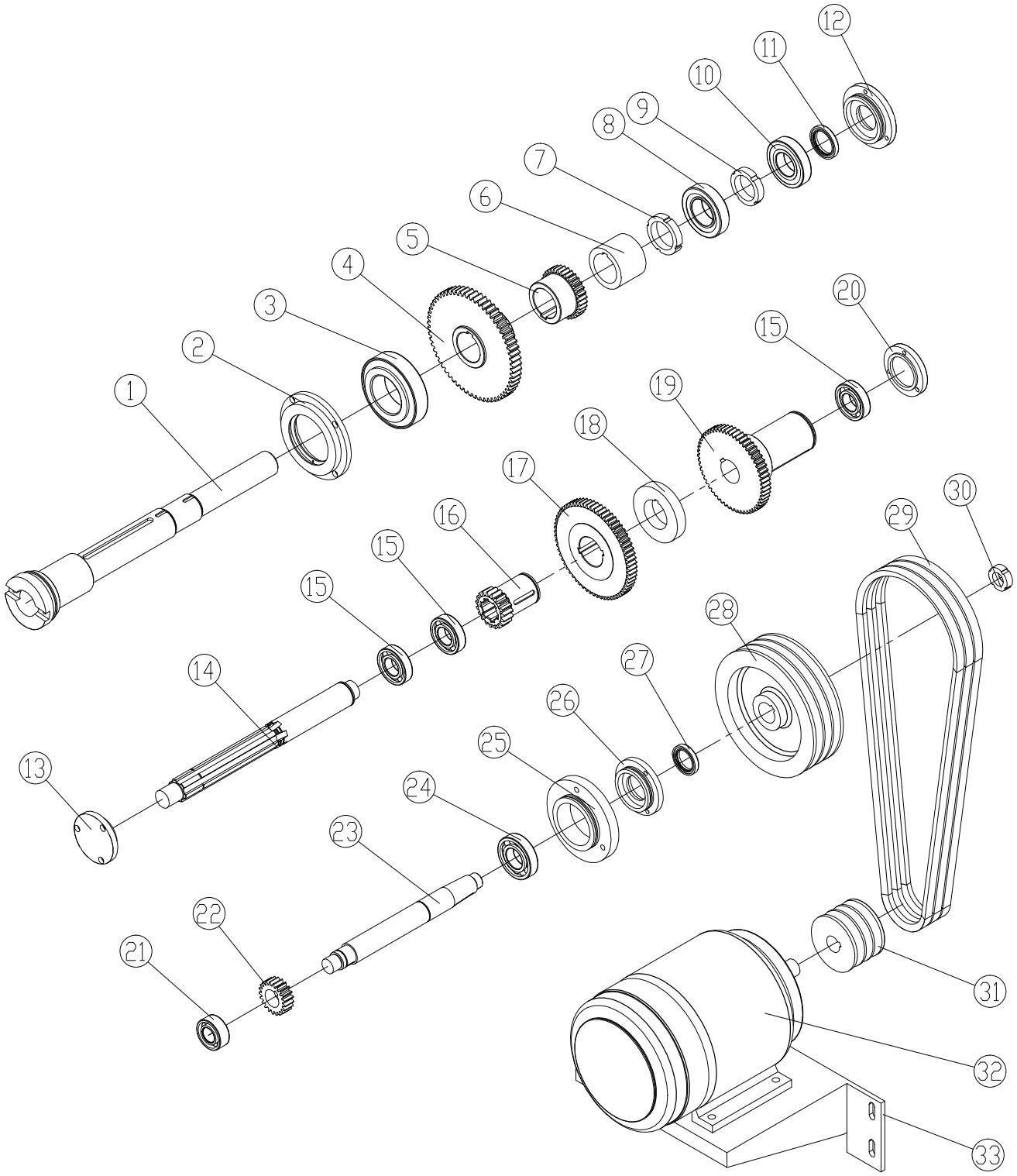
8.3 Horizontal Milling Gearbox Assembly Drawing / Parts List

No.	Parts No.	Description	Qty.
1	26H010	Horizontal Spindle	1
2	26H009	Cover	1
3	BR024	Roller Bearings(32213U)	1
4	26H011	Gear-A	1
5	26H012	Gear-B	1
6	26C313	Spacer	1
7	26H131	Locknuts	1
8	BR025	Roller Bearings(4T-32209)	1
9	26H132	Locknuts	1
10	BR007	Ball Bearing(6208)	1
11	TC001	Oil Seal(TC-40-55-8)	1
12	26H042	Cover	1
13	26H008	Cover	1
14	26H015	Countershaft	1
15	BR005	Ball Bearing(6206)	3
16	26H016	Gear-D	1
17	26H017	Gear-E	1
18	26C314	Spacer	1
19	26H019	Gear-G	1
20	26H041	Cover	1
21	BR027	Ball Bearing(5205S)	1
22	26C316	Gear-G	1
23	26C315	Pulley shaft	1
24	BR006	Ball Bearing(6207)	1
25	26H028	Bearing base	1
26	26H027	Cover	1
27	TC002	Oil Seal	1
28	26H004	Pulley	1
29	26H129	V-belts	3
30	26H133	Locknuts	1
31	26H006	Pulley shaft	1
32		Motor	1
33	26H007	Motor base	1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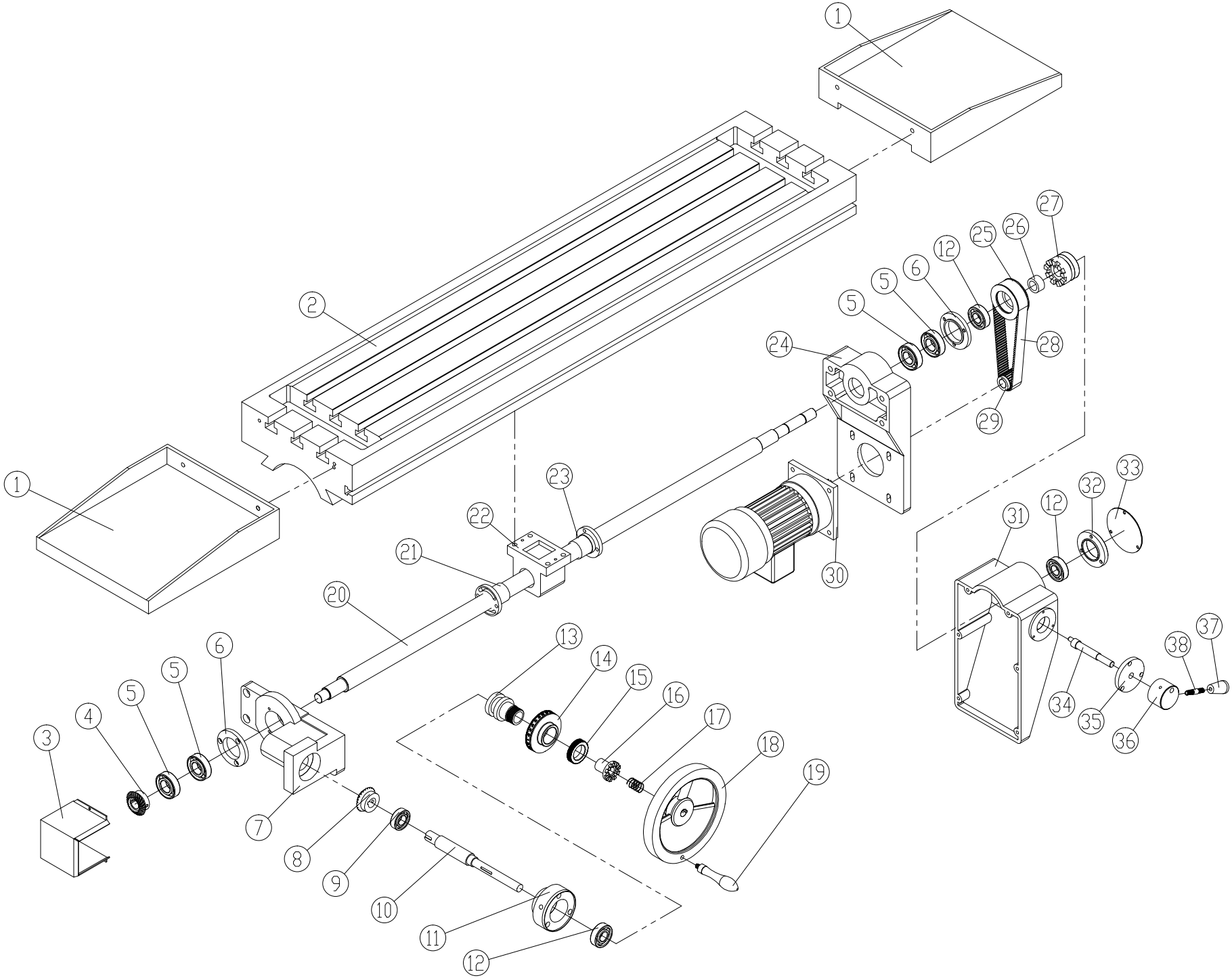
8.4 X axis Assembly Drawing / Parts List

No.	Parts No.	Description	Qty.
1	F003	Table Sheet Metal	2
2	86C023B	Table(54"x12")	1
3	F010	Gear cover	1
4	F007	Bevel Gear	1
5	BR014	Ball Bearing(7205)	2
6	F018	Bearing Cover	1
7	F019	Bearing housing	1
8	F007A	(Bevel Gear	1
9	BR001	Ball Bearing(6004)	1
10	F009	Handwheel Shaft	1
11	F011	Bearing Sleeve	1
12	BR003	Ball Bearing(6204)	1
13	F012	Graduated Ring	1
14	15C068	Scale Ring	1
15	F006	Locknuts	1
16	15C085	Clutch	1
17	F039	Spring	1
18	F004	Handwheel Shaft	1
19	F037	Curved Handle	1
20	26C377	Lead screw(1345L)	1
21	15C024A	Angle Tooth Nuts(X)	1
No.	Parts No.	Description	Qty.
22	F016	X-axis Nut Seat	1
23	15C024	Angle Tooth Nuts (X)	1
24	26C376	Bearing housing	1
25	26C370	Pulley(44T)	1
26	26C371	spacer ring	1
27	26C372	Clutch	1
28	H5M560	Tooth Belt	1
29	26C370	Pulley(22T)	1
30	26C380	Motor	1
31	26C378	Cover	1
32	15C066	Bearing Housing	1
33	26C381	Cover plate	1
34	26C379	Shaft	1
35	26C374	Cover	1
36	20B041	Block	1
37	16J049	Shift Lever	1
38	16J069	Black Ball (5/16")	1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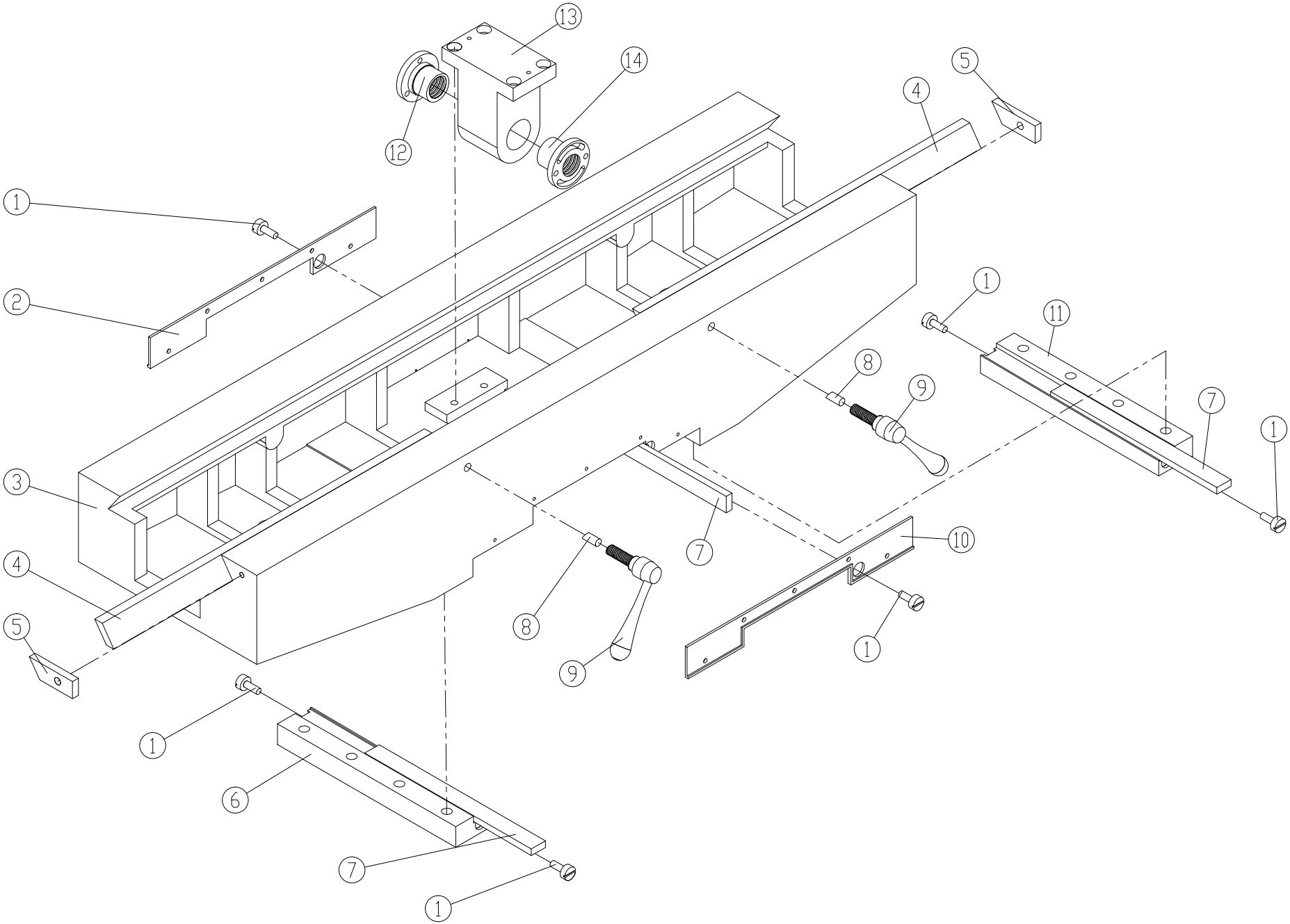
8.5 Y Axis Assembly Drawing

No.	Parts No.	Description	Qty.
1	15C041	Locking Screw	6
2	F035	Track Scraper (back)	1
3	86C052A	Saddle	1
4	F013A	X axis Wedge	2
5	F032	X axis Stop Block	2
6	F030	Y axis Left Side Rail	1
7	F008	Y axis Wedge	3
8	18C046	Stop Pin	2
9	F033	Fixed Handle	2
10	F034	Track Scraper (front)	1
11	F031	Y axis Right Side Rail	1
12	15C024B	Angle Tooth Nuts (Y)	1
13	F017	Y-axis Nut Seat	1
14	15C024C	Angle Tooth Nuts (Y)	1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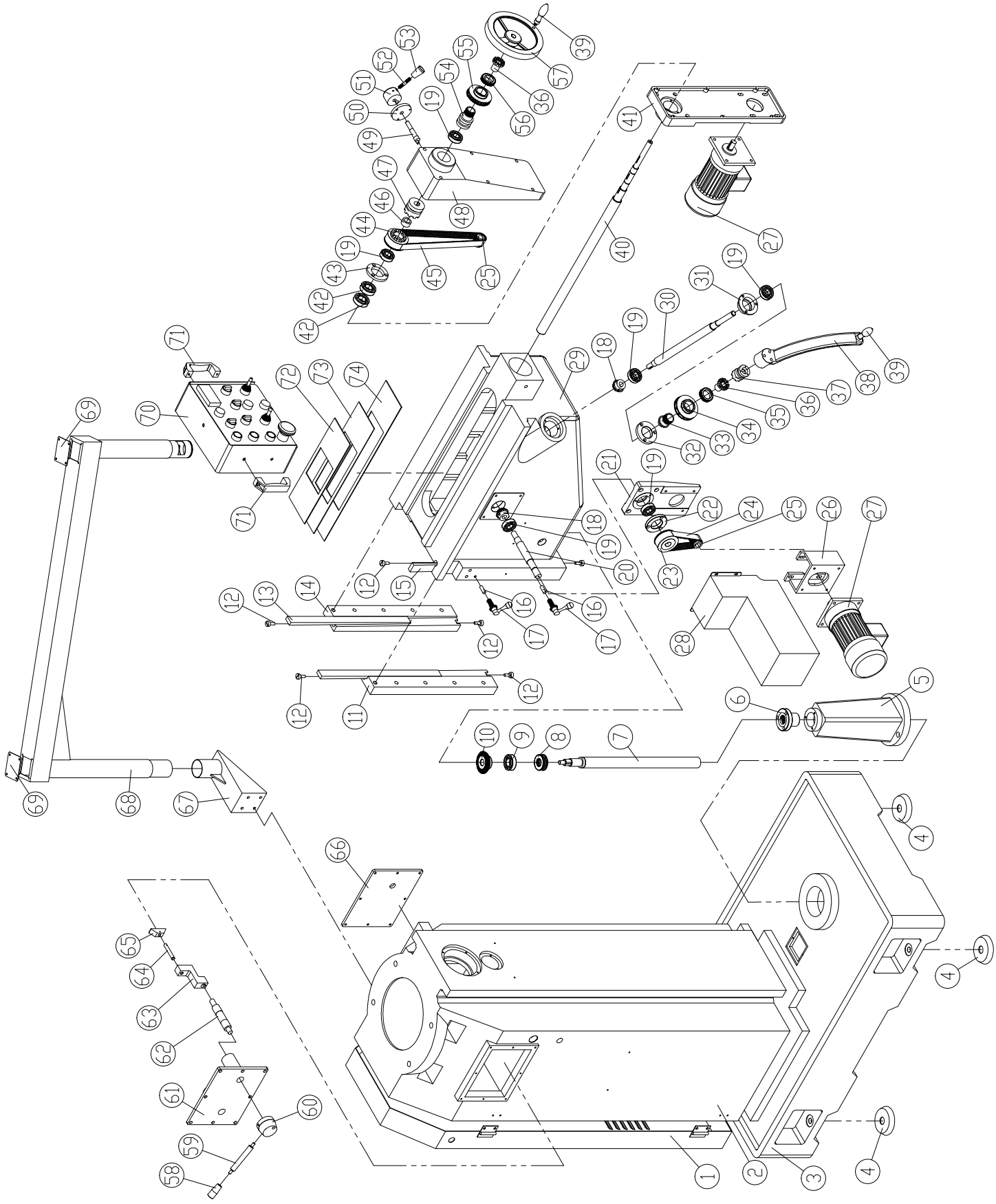
8.6 Z Axis Assembly Drawing / Parts List

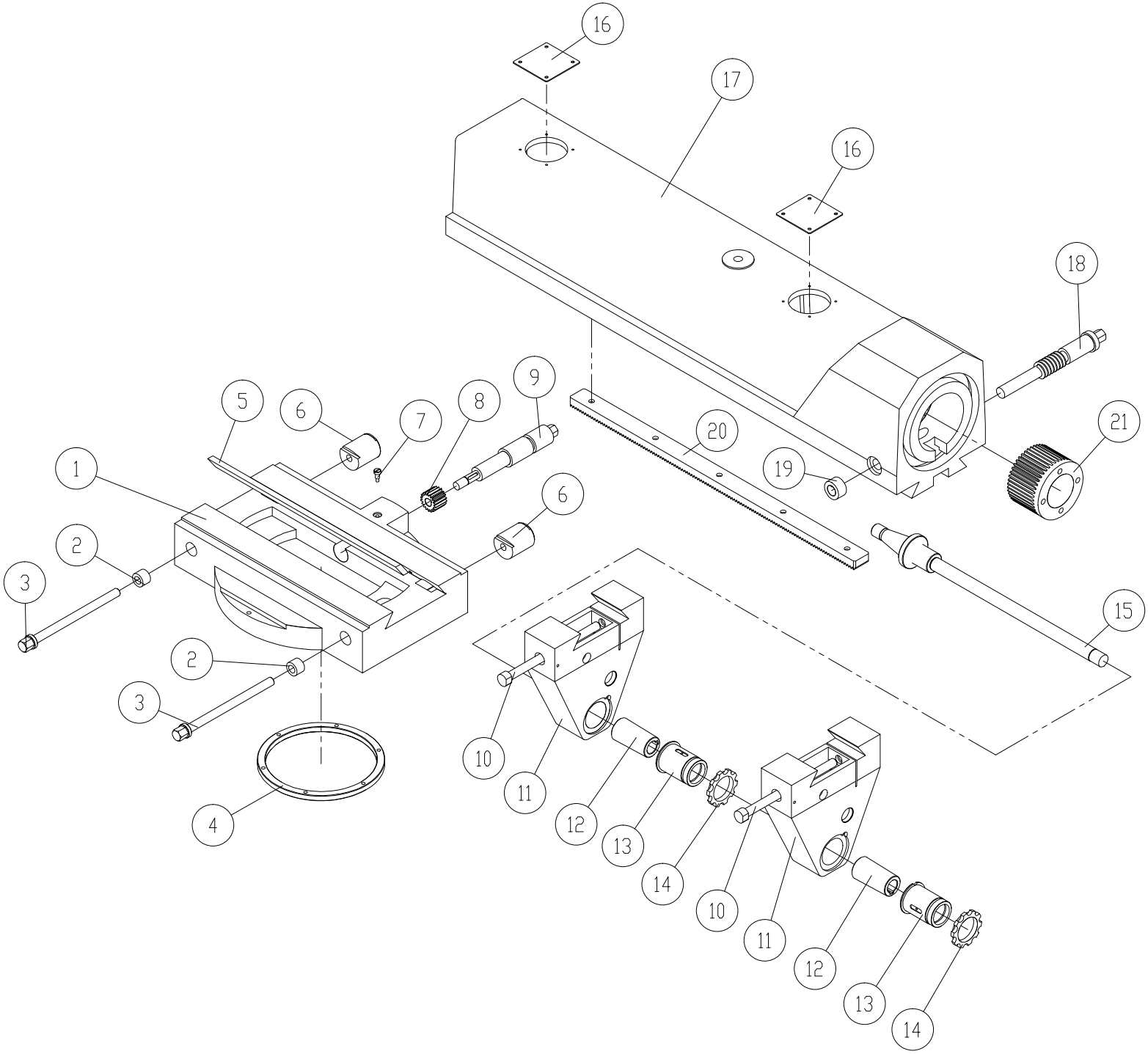
No.	Parts No.	Description	Qty.
1	26H045D	Rear Cover Plate	1
2	26C098	Body	1
3	26C099	Base	1
4	18C153	Feet Round Seat	4
5	16C103	Lift Bracket	1
6	15C104	Tooth Nuts(down)	1
7	16C082	Lead Screw	1
8	BR017	(Thrust Bearing(51305)	2
9	BR004	Ball Bearing(6205)	1
10	15C077	Bevel gear	1
11	18C141	Z axis Left Side Rail	1
12	15C041	Thrust Bearing(51305)	6
13	18C047	Z-axis wedge	2
14	18C140	Y axis Right Side Rail	1
15	18C055	Z axis Wedge	1
16	18C057	Stop Pin	2
17	15C037	Fixed Handle	2
18	15C096	Bevel Gear	2
19	BR003	Ball Bearing(6204)	6
20	26C304A	shaft	1
21	26C302	bearing block	1
22	15C066	Bearing cover	1
23	26C382	Pulley(44T)	1
24	H5M405	Tooth Belt	1
25	26C380	Pulley(22T)	2
26	26C303F	Bearing housing	1
27		Motor	2
28	26C319B	Cover	1
29	26C062	Lifting Seat	1
30	18C094	Gear Shaft	1
31	15C092	Bearing Housing	1
32	15C090	Bearing Cover	1
33	15C088	Dial Cover	1
34	15C087	Scale Ring	1
35	15C086	Locknuts	1
36	15C085	Clutch	2
37	18C084A	Handle Sleeve	1
38	20C086	Handle	1

No.	Parts No.	Description	Qty.
39	15C025	Curved Handle	2
40	26C369	Lead Screw (885L)	1
41	26C368	Bearing housing	1
42	BR014	Ball Bearing(7205)	2
43	F018	Bearing Cover	1
44	26C370	Pulley(44T)	1
45	H5M845	Tooth Belt	1
46	26C371	spacer ring	1
47	26C372	Clutch	1
48	26C373	Cover	1
49	26C375	Shaft	1
50	26C374	Cover	1
51	20B041	Block	1
52	16J049	Shift Lever	1
53	16J069	Black Ball (5/16")	1
54	F012	Graduated Ring	1
55	15C068	Scale Ring	1
56	F006	Locknuts	1
57	F004	Handwheel Shaft	1
58	15B191	Black Ball(3/8")	1
59	26H026	Shift Handle	1
60	26H039	Shift Seat	1
61	26H044	Shift Cover	1
62	26H029	Speed Shaft	1
63	26H032	Shift Fork	1
64	26H037	Toggle Jaw Mandrel	1
65	26H038	Toggle Claw	1
66	26H030	Right Cover	1
67	26H186	Support Frame	1
67	26H110	Boom	1
69	26H111	Cover	2
70	26H142	Operation Box	1
71	18C145	Handle	2
72	15C059	Chip Board (H)	1
73	15C060	Chip Board (M)	1
74	16C061	Chip Board(L)	1



8.7 Telescopic Arm Assembly Drawing / Parts List

No.	Parts No.	Description	Qty.
1	26C124	Disc Holder(26)	1
2	26H175	Spacer Ring	1
3	26H174	Locking Bolts	1
4	26H177	Disk Adapter	1
5	26H176	Wedge	1
6	26H173	Solid Lock Ring	1
7	15C128	Spacer Ring	1
8	26H170	Gear	1
9	26H172	Toothed Rod	1
10	26H185	Locking Screw	2
11	26H180	Horizontal Shaft Seat	2
12	26H182	Spacer Ring	2
13	26H181	Bushing	2
14	26H184	Locking Nut	2
15	26H183	Horizontal Spindle Rod	1
16	26H179	Cover Plate	2
17	26C010F	Telescopic Arms (26)	1
18	18C005	Worm Shaft	1
19	18C004	Spacer	1
20	26H171	Tooth Row	1
21	18C001	Tilt Worm Gear	1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